







Example of a random variable

Random Experiment: Roll a six-sided die.

Sample space						
	s_1	s_2	s_3	s_4	s_5	s_6
X_1	1	2	3	4	5	6
X_2	-1	-2	-3	-4	-5	-6
X_3	1	4	9	16	25	36
$2X_1$	2	4	6	8	10	12
$X_1 + X_3$	2	6	12	20	30	42

$$E[X] = p(s_1)X(s_1) + p(s_2)X(s_2) + p(s_3)X(s_3) + p(s_4)X(s_4) + p(s_5)X(s_5) + p(s_6)X(s_6)$$

$$E[X^2] = p(s_1)X^2(s_1) + p(s_2)X^2(s_2) + p(s_3)X^2(s_3) + p(s_4)X^2(s_4) + p(s_5)X^2(s_5) + p(s_6)X^2(s_6)$$